

**What is Claimed is:**

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1. A method of advertising over a communications network comprising a plurality of interactive customer subscriber sites interconnected with an advertising information server site, the method comprising the steps of:

storing the attributes of a plurality of customers in the form of customer attribute vectors  $c_k$ ;

storing the attributes of one or more role models in the form of one or more role model attribute vectors  $i_j$ ;

defining a marketing function  $M$  which maps the customer attribute vectors to the one or more role model attribute vectors such that

$$i_j = M(c_k) ;$$

providing, at the interface advertising information server site, interactive advertising displays incorporating the one or more role models;

establishing an interactive communication link from the customer subscriber sites to the advertising information server site enabling customers to access the displays and to make purchases in response to the displays; and

updating the marketing function  $M$  in dependence upon the customer purchases.

2. A method as claimed in claim 1, wherein the role model constitutes one of a plurality of such role models, the step of defining a marketing function  $M$  which maps the customer attribute vectors  $c_k$  to the role model attribute vectors  $i_j$  includes defining a plurality of marketing functions  $M$  which map customer attribute vectors  $c_k$  to a plurality of role model attribute vectors  $i_j$ , and the step of updating the marketing function  $M$  in dependence upon the customer purchases includes the step of learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  that maximize sales.

3. A method as claimed in claim 2, wherein the step of learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises using a genetic algorithm to evolve the mapping function.

4. A method as claimed in claim 2, wherein the step of learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises using a three-layer neural network to find the mapping function by back propagation.

5. A method as claimed in claim 2, wherein the step of learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises treating parameters of the marketing function as probability distributions and using Bayesian inference to find the posterior distribution of the marketing function parameters.

6. A method as claimed in claim 2, wherein the step of learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises using non-linear regression to map  $c_k$  to  $i_j$ .

7. Apparatus for advertising over a communications network comprising a plurality of interactive customer subscriber sites interconnected with an advertising information server site, the apparatus comprising:

means for storing the attributes of a plurality of customers in the form of customer attribute vectors  $c_k$ ;

means for storing the attributes of one or more role models in the form of one or more role model attribute vectors  $i_j$ ;

means for defining a marketing function  $M$  which maps the customer attribute vectors to the one or more role model attribute vectors such that

$$i_j = M(c_k) ;$$

means providing, at the interface advertising information server site, interactive advertising displays incorporating the one or more role models;

means for establishing an interactive communication link from the customer subscriber sites to the advertising information server site enabling customers to access the displays and to make purchases in response to the displays; and

means for updating the marketing function  $M$  in dependence upon the customer purchases.

8. Apparatus as claimed in claim 7, wherein the role model constitutes one of a plurality of such role models, the means for defining a marketing function  $M$  which maps the customer attribute vectors  $c_k$  to the role model attribute vectors  $i_j$  includes means defining a plurality of marketing functions  $M$  which map customer attribute vectors  $c_k$  to a plurality of role model attribute vectors  $i_j$ , and the means for updating the marketing function  $M$  in dependence upon the customer purchases includes means for learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  that maximize sales.

9. Apparatus as claimed in claim 8, wherein the means for learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises means to process a genetic algorithm to evolve the mapping function.

10. Apparatus as claimed in claim 8, wherein the means for learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises a three-layer neural network to find the mapping function by back propagation.

11. Apparatus as claimed in claim 8, wherein the means for learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises means to treat parameters of the marketing function as probability distributions and to employ Bayesian inference to find the posterior distribution of the marketing function parameters.

12. Apparatus as claimed in claim 8, wherein the means for learning the mapping from the vectors  $c_k$  to the vectors  $i_j$  comprises non-linear regression means to map  $c_k$  to  $i_j$ .

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